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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/813,656	Applicant(s) HEATH ET AL.	
	Examiner Curtis B. Odom	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,46-56 and 74-88* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,46-56 and 74-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/16/2006 have been fully considered but they are not persuasive. The applicant states Gould et al. (U. S. Patent No. 6, 134, 445) does not disclose "receiving a data transmission that originates from multiple transmit antennae". However, Gould et al. discloses receiving a TDMA data transmission in a test mode of the receiver (see column 3, lines 34-40 and column 26-39) over a plurality of channels, wherein the wireless TDMA data transmission originates from different transmit antennae of multiple base station radios (see column 56, lines 40-55) which correspond to different TDMA channels. The results of this test mode data reception are then processed and displayed (see column 5, lines 7-45). Based on the above disclosure, it is the understanding of the examiner that Gould et al. does in fact disclose "receiving a data transmission that originates from multiple transmit antennae".

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 10-12, 46, 47, 49, and 76-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Gould et al. (previously cited in Office Action 8/8/2006).

Regarding claim 1, Gould et al. discloses a method for displaying a quality of a wireless data transmission comprising:

receiving the wireless data transmission at a wireless receiver (Fig. 3, element 311, see column 2, lines 59-67) wherein the wireless data transmission originates from multiple transmit antennae (not shown) of multiple base station radios as described in column 5, lines 40-55;

determining the quality (error rate) of the wireless data transmission for each signal (channel) expressed as values on a bar graph (see Figs. 9-12, column 5, lines 14-29) based on a quality parameter such as bit error rate (see column 3, lines 24-27) of the incoming wireless data transmission; and

displaying on a bar graph (see Figs. 9-12, column 5, lines 14-39) the quality of the wireless data transmission.

Regarding claim 2, Gould et al. discloses determining a value of the quality parameter (bit error rate) for each of the multiple incoming signals (column 3, lines 23-26).

Regarding claim 4, Gould et al. discloses the quality parameter is bit error rate (column 3, lines 23-26).

Regarding claim 10, Gould et al. discloses determining a set of propagation channels (bands) within a frequency range for the wireless data transmission (see column 4, lines 26-34); and determining (see column 4, lines 40-42) and displaying (column 5, lines 22-29) a bit error rate for the signals of set of channels (bands) in the frequency range.

Regarding claim 11, Gould et al. discloses the quality parameter is bit error rate (column 3, lines 24-27).

Regarding claim 12, Gould et al. discloses the quality parameter is the bit error rate of multiple incoming signals (column 3, lines 24-27 and column 4, lines 40-42).

Regarding claim 46, Gould et al. discloses an apparatus (Fig. 2) for displaying a quality of a wireless data transmission comprising:

a wireless receiver as a means for receiving the wireless data transmission (Fig. 3, element 311, see column 2, lines 59-67) wherein the wireless data transmission originates from multiple transmit antennae (not shown) of multiple base station radios as described in column 5, lines 40-46;

a means within the wireless receiver (Fig. 3, element 311) for determining the quality (error rate) of the wireless data transmission for each signal (channel) expressed as values on a bar graph (see Figs. 9-12, column 5, lines 14-29) based on a quality parameter such as bit error rate (see column 3, lines 24-27) of the incoming wireless data transmission; and

a display (Fig. 3, element 205) as a means for displaying on a bar graph (see Figs. 9-12, column 5, lines 14-39) the quality of the wireless data transmission.

Regarding claim 47, Gould et al. discloses a means within the wireless receiver (Fig. 3, block 311) for determining a value of the quality parameter (bit error rate) for each of the multiple incoming signals (column 3, lines 23-26).

Regarding claim 49, Gould et al. discloses the display (Fig. 3, block 205) comprises means for displaying the bit error rate on a bar graph (see Figs. 9-12, column 5, lines 14-39)

Regarding claim 76, Gould et al. discloses an apparatus (Fig. 2 and Fig. 3) comprising:

a wireless receiver (Fig. 3, block 311), to receive wireless incoming data signals (see column 2, lines 59-67) which output voice data (see column 3, lines 30-33) wherein the wireless transmission originates from multiple transmit antennae (not shown) of multiple base station radios as described in column 5, lines 40-55; and

a quality display unit (Fig. 3, block 205), responsive to the wireless receiver, to determine a quality (error rate) of received incoming signals for different channels (bands) and express this value on a bar graph (see Figs. 9-12, column 5, lines 14-29) based, at least in part on a quality parameter such as bit error rate for each incoming signal (column 3, lines 23-27 and column 4, lines 40-42) associated with the incoming signals, and to provide a display (Figs. 9-12) of such quality of the incoming wireless signals.

Regarding claim 77, Gould et al. discloses a terminal processor (Fig. 3, block 305) representing a quality indicator processor responsive to the bit error rates determined for each acquired signal of the scanned set of channels as described in column 4, lines 26-42, wherein the terminal processor determines quality screens provided to the display representing the (bit error rate) information provided for each signal of the set of channels as described in column 4, lines 49-53.

Regarding claim 78, Gould et al. discloses the quality display, (Fig. 3, block 205), responsive to the terminal processor (see column 4, lines 49-53), for displaying the quality screens.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 5, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claims 1 and 46, in view of Servais et al. (previously cited in Office Action 8/8/2006).

Regarding claim 3, Gould et al. does not disclose determining an aggregate value of the bit error for the multiple incoming signals.

However, Servais et al. discloses determining an average (aggregate) value of the bit error rate for a plurality of data frames (signals), see column 4, lines 49-59. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to determine an average bit error rate of multiple signals in a communication channel in the method of Gould et al. as taught by Servais since Servias et al. states the bit error rate is utilized to characterized the performance of a communication channel and support channel making decisions in communication systems (column 2, lines 63-67).

Regarding claim 5, Gould et al discloses the quality parameter in bit error rate (column 3, lines 23-27

Regarding claim 48, Gould et al. does not disclose a means for determining an aggregate value of the bit error for the multiple incoming signals.

However, Servais et al. discloses a means for determining an average (aggregate) value of the bit error rate for a plurality of data frames (signals), see column 4, lines 49-59. Therefore,

it would have been obvious to one skilled in the art at the time the invention was made to determine an average bit error rate of multiple signals in a communication channel in the apparatus of Gould et al. as taught by Servais since Servias et al. states the bit error rate is utilized to characterized the performance of a communication channel and support channel making decisions in communication systems (column 2, lines 63-67).

6. Claims 6, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claims 2 and 10, in view of Mitlin et al. (previously cited in Office Action 8/8/2006).

Regarding claim 6, Gould et al. discloses measuring a received signal strength of incoming signals (column 4, lines 40-48) in units of decibels (dBm) and displaying these values (see Fig. 6, column 4, lines 62-67). Gould et al. does not disclose determining a signal-to-noise ratio for multiple signals.

Mitlin et al. discloses acquiring a signal-to-noise ratio for a subset of channels (signals) and then determining an average signal-to-noise ratio for the subset of channels (see, column 2, lines 42-47). Therefore, it would have been obvious to one skilled in the art that since signal-to-noise-ratio can also be expressed in decibels to calculate signal-to-noise ratios for signals (channels) in Gould et al. as disclosed by Mitlin et al. to be displayed since Mitlin et al. states the signal-to-ratio can be used to select parameters such as forward error correction parameters (column 2, lines 42-49).

Regarding claim 13, the claimed method includes limitations similar to the above rejection of claim 6, which is applicable hereto.

Regarding claim 14, the claimed method includes limitations similar to the above rejection of claim 6, which is applicable hereto.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claims 2, in view of Harrow et al. (previously cited in Office Action 8/8/2006).

Regarding claim 8, Gould et al. does not disclose determining the number cyclic redundancy check failures.

However, Harrow et al. discloses calculating and displaying cyclic redundancy check (CRC) failures using a graphical representation (see, column 11, lines 55-67), wherein the viewing of the CRC failures is determined by a user. Therefore, it would have been obvious to determine and display CRC failures in Gould et al. as disclosed by Harrow et al. to allow the device of Gould et al. to view information in an intuitive manner (see Harrow et al., column 1, lines 15-18).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claim 10, in view of Fujii et al. (previously cited in Office Action 8/8/2006).

Regarding claim 15, Gould et al. does not disclose determining and displaying a delay spread of signals.

However, Fujii et al. discloses determining a delay spread in a delay spread computer (Fig. 1, block 9) and displaying a delay spread of signals in a display device (Fig. 1, block 10, see section 0013). Therefore, it would have been obvious to one skilled in the art the time the invention was made to determine and display a delay spread in Gould et al. as disclosed by Fujii

et al. since Fujii et al. states the delay spread can be used to reduce estimation errors (see Abstract).

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Servais et al. (previously cited in Office Action 8/8/2006) as applied to claim 3, and in further view of Mitlin et al. (previously cited in Office Action 8/8/2006).

Regarding claim 7, Gould et al. discloses measuring a received signal strength of incoming signals (column 4, lines 40-48) in units of decibels (dBm) and displaying these values (see Fig. 6, column 4, lines 62-67). Gould et al. and Servais et al. do not disclose determining a signal-to-noise ratio for multiple signals.

Mitlin et al. discloses acquiring a signal-to-noise ratio for a subset of channels (signals) and then determining an average signal-to-noise ratio for the subset of channels (see, column 2, lines 42-47). Therefore, it would have been obvious to one skilled in the art that since signal-to-noise-ratio can also be expressed in decibels to calculate signal-to-noise ratios for signals (channels) in Gould et al. and Servais et al. as disclosed by Mitlin et al. to be displayed since Mitlin et al. states the signal-to-ratio can be used to select parameters such as forward error correction parameters (column 2, lines 42-49).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Servais et al. (previously cited in Office Action 8/8/2006) as applied to claim 3, and in further view of Harrow et al. (previously cited in Office Action 8/8/2006).

Regarding claim 8, Gould et al. and Servais et al. do not disclose determining the number cyclic redundancy check failures.

However, Harrow et al. discloses calculating and displaying cyclic redundancy check (CRC) failures using a graphical representation (see, column 11, lines 55-67), wherein the viewing of the CRC failures is determined by a user. Therefore, it would have been obvious to determine and display CRC failures in Gould et al. and Servais et al. as disclosed by Harrow et al. to allow the device of Gould et al. to view information in an intuitive manner (see Harrow et al., column 1, lines 15-18).

12. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Servais et al. (previously cited in Office Action 8/8/2006) as applied to claim 48, and in further view of Waschura et al. (previously cited in Office Action 8/8/2006).

Regarding claim 50, Gould et al. and Servais et al. do not disclose displaying the average (aggregate) bit error rate value.

However, Waschura et al. discloses a bit error tester for displaying an average error rate (column 1, lines 43-47). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Gould et al. and Servais et al. to display an average error rate as disclosed by Waschura et al. since Gould et al. states determining and displaying these parameters such as bit error rate can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

13. Claim 51, 56, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claim 49 and 76, in view of Noe et al. (previously cited in Office Action 8/8/2006).

Regarding claim 51, Gould et al. does not disclose the display comprises LED indicators. However, Gould et al. does disclose displaying the signal strength of received signals (see Fig. 6, column 4, lines 62-67). Noe et al. further discloses using multiple LED indicators (Fig. 7, elements 40A-E, column 5, lines 41-48) to display the signal strength of multiple signals (applied to RAM, processor, etc.). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the signal strength using LED indicators in Gould et al. as disclosed by Noe et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

Regarding claim 56, Gould et al. further discloses determining and displaying a channel quality parameter such as bit error rates corresponding to different frequency channels (bands), see column 5, lines 22-29. Gould et al. also discloses determining and displaying a data quality parameter such as signal strength for a multiple of received signals (see column 5, lines 7-13). Gould et al. does not disclose displaying the channel quality parameter in a first set of LED indicators or the data quality parameter in a second set of LED indicators.

However, Noe et al. further discloses using multiple sets of LED indicators (Fig. 7, elements 40A-E, column 5, lines 41-48), wherein each set of LED indicators is used to display the signal strength of separate signals (signals applied to RAM, processor, etc.). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display

the data and channel quality parameters using the sets of LED indicators in Gould et al. as disclosed by Noe et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

Regarding claim 83, Gould et al. further discloses determining and displaying a channel quality parameter such as bit error rates corresponding to different frequency channels (bands), see column 5, lines 22-29. Gould et al. also discloses determining and displaying a data quality parameter such as signal strength for a multiple of received signals (see column 5, lines 7-13). Gould et al. does not disclose displaying the channel quality parameter in a first set of indicators or the data quality parameter in a second set of indicators.

However, Noe et al. further discloses using multiple sets of LED indicators (Fig. 7, elements 40A-E, column 5, lines 41-48), wherein each set of LED indicators is used to display the signal strength of separate signals (signals applied to RAM, processor, etc.). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the data and channel quality parameters using the sets of LED indicators in Gould et al. as disclosed by Noe et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

14. Claims 52 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claim 49, in view of Fordham et al. (previously cited in Office Action 8/8/2006).

Regarding claim 52, Gould et al. does not disclose the display comprises analog meters. However, Fordham et al. discloses displaying a received digital signal using an analog meter (see column 4, lines 41-47). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the signals or parameters using analog meters in Gould et al. as disclosed by Fordham et al. since Gould et al. discloses determining and displaying signal parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

Regarding claim 55, Gould et al. further discloses determining and displaying a channel quality parameter such as bit error rates corresponding to different frequency channels (bands), see column 5, lines 22-29. Gould et al. also discloses determining and displaying a data quality parameter such as signal strength for a multiple of received signals (see column 5, lines 7-13). Gould et al. does not disclose displaying the channel quality parameter in a first analog meter or the data quality parameter in a second analog meter.

However, Fordham et al. discloses displaying a received digital signal using a plurality of analog meters (see column 3, lines 35-42 and column 4, lines 41-47). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the data and channel signal (parameters) using the plurality of analog meters in Gould et al. as disclosed by Fordham et al. since Gould et al. discloses determining and displaying signal parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

15. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Servais et al. (previously cited in Office

Action 8/8/2006) and in view of Waschura (previously cited in Office Action 8/8/2006) as applied to claim 50, and in further view of Noe et al. (previously cited in Office Action 8/8/2006).

Regarding claim 53, Gould et al., Servais et al., and Waschura et al. do not disclose the display comprises separate sets of LED indicators wherein each set of LED indicators corresponds to multiple signals. However, Gould et al. does disclose displaying the signal strength of received signals (see Fig. 6, column 4, lines 62-67). Noe et al. further discloses using multiple sets of LED indicators (Fig. 7, elements 40A-E), wherein each set of LED indicators is used to display the signal strength of separate signals (signals applied to RAM, processor, etc.). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the signal strength using LED indicators in Gould et al., Servais et al., and Waschura et al. as disclosed by Noe et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

16. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Servais et al. (previously cited in Office Action 8/8/2006) and in view of Waschura et al. (previously cited in Office Action 8/8/2006) as applied to claim 50, and in further view of Fordham et al. (previously cited in Office Action 8/8/2006).

Regarding claim 54, Gould et al., Servais et al., and Waschura et al. do not disclose the display comprises an analog meter. However, Fordham et al. discloses displaying a received digital signal using an analog meter (see column 4, lines 41-47). Therefore, it would have been

obvious to one skilled in the art at the time the invention was made to display the signals or (aggregate) parameters using analog meters in Gould et al., Servais et al., and Waschura et al. as disclosed by Fordham et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

17. Claims 74, 75, 82, and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claims 1, 49, 76 in view of Siwiak et al. (previously cited in Office Action 8/8/2006).

Regarding claims 74, 75, and 82, Gould et al. does not disclose the multiple signals are received via two or more receive antennas.

However, Siwiak et al. discloses a receiver (Fig. 8) comprising multiple antennas creating diversity reception for receiving wireless radio signals (column 2, lines 23-28), wherein the receiver also comprises a signal quality indicator location (Fig. 8, block 154, see column 4, lines 59-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the receiver of Gould et al. to receive signals via multiple receive antennas as disclosed by Siwiak et al. to create diversity reception which improves reception in a changing multipath environment (see Siwiak et al., column 1, lines 13-19).

Regarding claim 84, Gould et al. discloses an system (Fig. 2 and Fig. 3) comprising:

multiple transmit antennae (not shown) of multiple base station radios as described in column 5, lines 40-46;

a wireless receiver (Fig. 3, block 311), responsive to the multiple base station radios, to receive multiple wireless incoming signals (see column 2, lines 59-67) wherein the wireless

transmission originates from multiple transmit antennae (not shown) of multiple base station radios as described in column 5, lines 40-46, to determine quality (error rate) of for each signal (channel) expressed as values on a bar graph (see Figs. 9-12, column 5, lines 14-29) based on a quality parameter such as bit error rate (see column 3, lines 24-27) of the incoming wireless data transmission; and

a quality display unit (Fig. 3, block 205), responsive to the wireless receiver, to provide a display (Figs. 9-12) of such quality of the incoming wireless signals.

Gould et al. does not disclose the multiple incoming wireless signals are received via two or more receive antennas.

However, Siwiak et al. discloses a receiver (Fig. 8) comprising multiple antennas creating diversity reception for receiving wireless radio signals (column 2, lines 23-28), wherein the receiver also comprises a signal quality indicator location (Fig. 8, block 154, see column 4, lines 59-65). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the receiver of Gould et al. to receive signals via multiple receive antennas as disclosed by Siwiak et al. to create diversity reception which improves reception in a changing multipath environment (see Siwiak et al., column 1, lines 13-19).

18. Claims 79 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) as applied to claim 78, in view of Elgamal et al. (previously cited in Office Action 8/8/2006).

Regarding claims 79 and 80, Gould et al. discloses displaying a set of determined quality values (see Figs. 9-12). Gould et al. does not disclose the transmission is comprised of multiple spatial streams.

However, Elgamal et al. discloses (in column 1, lines 43-46) creating transmission signals by channel coding across the spatial dimension to benefit from the spatial diversity provided by multiple transmit antennas. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to allow the reception of transmission signals in Gould et al. which are created using the spatial techniques as disclosed by Elgamal et al. since Elgamal et al. discloses spatial diversity allows for significant increase in the capacity of wireless communication systems operated in a Rayleigh fading environment (see column 1, lines 29-42).

19. Claims 85 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Siwiak et al. (previously cited in Office Action 8/8/2006) as applied to claim 84, and in further view of Elgamal et al. (previously cited in Office Action 8/8/2006).

Regarding claims 85 and 86, Gould et al. discloses displaying a set of determined quality values (see Figs. 9-12). Gould et al. and Siwiak et al. do not disclose the transmission is comprised of multiple spatial streams.

However, Elgamal et al. discloses (in column 1, lines 43-46) creating transmission signals by channel coding across the spatial dimension to benefit from the spatial diversity provided by multiple transmit antennas. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to allow the reception of transmission signals in Gould et al. and Siwiak et al. which are created using the spatial techniques as disclosed by Elgamal et al. since Elgamal et al. discloses spatial diversity allows for significant increase in the capacity of wireless communication systems operated in a Rayleigh fading environment (see column 1, lines 29-42).

20. Claims 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Elgamal et al. (previously cited in Office Action 8/8/2006)) as applied to claim 79, and in further view of Waschura et al. (previously cited in Office Action 8/8/2006).

Regarding claim 81, Gould et al. and Elgamal et al. do not disclose displaying an average (mathematical combination) bit error rate value for the multiple (spatial) incoming signals.

However, Waschura et al. discloses a bit error tester for displaying an average error rate (column 1, lines 43-47). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Gould et al. and Elgamal et al. to display an average error rate as disclosed by Waschura et al. since Gould et al. states determining and displaying these parameters such as bit error rate can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

21. Claims 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Siwiak et al. (previously cited in Office Action 8/8/2006) in further view of Elgamal et al. (previously cited in Office Action 8/8/2006) as applied to claim 85, and in further view of Waschura et al. (previously cited in Office Action 8/8/2006).

Regarding claim 87, Gould et al., Siwiak et al, and Elgamal et al. do not disclose displaying an average (mathematical combination) bit error rate value for the multiple (spatial) incoming signals.

However, Waschura et al. discloses a bit error tester for displaying an average error rate (column 1, lines 43-47). Therefore, it would have been obvious to one skilled in the art at the

time the invention was made to modify the device of Gould et al., Siwiak et al., and Elgamal et al. to display an average error rate as disclosed by Waschura et al. since Gould et al. states determining and displaying these parameters such as bit error rate can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

22. Claim 88 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gould et al. (previously cited in Office Action 8/8/2006) in view of Siwiak et al. (U previously cited in Office Action 8/8/2006) as applied to claim 84, and in further view of view of Noe et al. (previously cited in Office Action 8/8/2006).

Regarding claim 88, Gould et al. further discloses determining and displaying a channel quality parameter such as bit error rates corresponding to different frequency channels (bands), see column 5, lines 22-29. Gould et al. also discloses determining and displaying a data quality parameter such as signal strength for a multiple of received signals (see column 5, lines 7-13). Gould et al. and Siwiak et al. do not disclose displaying the channel quality parameter in a first set of indicators or the data quality parameter in a second set of indicators.

However, Noe et al. further discloses using multiple sets of LED indicators (Fig. 7, elements 40A-E, column 5, lines 41-48), wherein each set of LED indicators is used to display the signal strength of separate signals (signals applied to RAM, processor, etc.). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to display the data and channel quality parameters using the sets of LED indicators in Gould et al. and Siwiak et al. as disclosed by Noe et al. since Gould et al. discloses determining and displaying these parameters such as signal strength can be used to address inadequate signal coverage (column 1, lines 23-25) by adjusting base stations.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
January 1, 2007

JAY K. PATEL
SUPERVISORY PATENT EXAMINER